

Amendments to the Claims

~~Please cancel Claim 3. Please amend Claims 1, 2, 5, 7, and 8. Please add new Claims 9-12. The Claim Listing below will replace all prior versions of the claims in the application:~~

Claim Listing

1. (Currently Amended) A burst mode receiver comprising:
 - a converter which converts a received optical signal including a plurality of packets transmitted in burst mode into an electrical signal;
 - a pre-amplifier coupled to the converter through a capacitor, which receives ~~the~~ an AC-coupled electrical signal from the converter and outputs a corresponding voltage signal, the voltage signal having a driven edge time constant for each driven edge of the AC-coupled electrical signal and an undriven edge time constant that is extended and longer than the driven edge time constant for each undriven edge of the AC-coupled electrical signal; and
 - a differential amplifier having a hysteresis circuit coupled to the pre-amplifier, the differential amplifier receiving the voltage signal from the pre-amplifier and outputting a digital signal corresponding to the voltage signal, wherein the hysteresis circuit holds the digital signal in a particular state for each undriven edge of the voltage signal and changes the state of the digital signal for each driven edge of the voltage signal.
2. (Currently Amended) The burst mode receiver of Claim 1 wherein ~~the optical signal includes a plurality of packets transmitted in burst mode and~~ the undriven edge time constant is shorter than a guard time between packets.
3. Canceled.
4. (Original) The burst mode receiver of Claim 2 wherein the packets have a wide dynamic range of power levels.

5. (Currently Amended) The burst mode receiver of Claim 3 4 wherein the range of power level levels is in the range -32dBm to -7dBm
6. (Original) The burst mode receiver of Claim 1 further comprising a filter coupled between the pre-amplifier and the differential amplifier.
7. (Currently Amended) The burst mode receiver of Claim 1 wherein the optical signal is received from a ~~transmitter~~ remote terminal in a Passive Optical Network.
8. (Currently Amended) A method of receiving an optical signal comprising:
 - converting an optical signal including a plurality of packets transmitted in burst mode to an electrical signal;
 - AC-coupling the electrical signal through a capacitor to provide an AC-coupled signal;
 - outputting a voltage signal corresponding to the AC-coupled signal, the voltage signal having a driven edge time constant corresponding to each driven edge of the AC-coupled signal and an undriven edge time constant extended and longer than the driven edge time constant corresponding to each undriven edge of the AC-coupled signal; and
 - outputting a digital signal corresponding to the voltage signal, the digital signal holding a particular state for each undriven edge of the voltage signal and changing state for each driven edge of the voltage signal.
9. (New) The method of claim 8 wherein the undriven edge time constant is shorter than a guard time between packets.
10. (New) The method of claim 8 wherein the packets have a wide dynamic range of power levels.
11. (New) The method of claim 10 wherein the range of power levels is -32dBm to -7dBm

Appl'd.
Am'd.

12. (New) The method of claim 8 wherein the optical signal is received from a remote terminal in a Passive Optical Network.